UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,620	12/27/2001	James W. Overbeck	3319.3 (02US2)	9519

33743 7590 09/17/2004

CHIEF INTELLECTUAL PATENT COUNSEL
AFFYMETRIX, INC.
3380 CENTRAL EXPRESSWAY
SANTA CLARA, CA 95051

EXAMINER	
NGUYEN, THONG Q	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,620	OVERBECK, JAMES W.	
	Examiner	Art Unit	
	Thong Q Nguyen	2872	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2003 and 30 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *62-90* is/are pending in the application.

4a) Of the above claim(s) *66,67 and 82-90* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *62-65 and 68-81* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The present Office action is made in response to the amendment filed on 5/19/2003 and the Election/amendment filed on 3/30/2004.

2. It is noted that in the amendment filed on 5/19/2003, applicant has made amendments to claim 62 and added a new set of claims, i.e., claims 63-89, into the application. A restriction requirement was made and an Office action was mailed to applicant on 7/25/2003. In response to the restriction requirement, applicant has filed an election and an amendment of 3/30/04 in which applicant has made amendments to claims 77 and 85; and added a new claim, i.e., claim 90, into the application.

3. As amended and newly-added, the pending claims 62-90 are subjected to the following restriction.

Election/Restrictions

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 63-64 and 72-81, drawn to a scanner having an oscillating support structure for supporting a scanning assembly and an objective lens, classified in class 359, subclass 196+.

II. Claims 66-67, drawn to a scanner having a data collection control and processing unit for collecting data in a specific manner of the scanning operation, classified in class 359, subclass 363+.

III. Claims 82-90, drawn to a scanner having an oscillating support structure for supporting a scanning assembly and an objective lens, and a data

collection control and processing unit for collecting data in a specific manner of the scanning operation, classified in class 359, subclasses 196+ and 363+.

5. Claim 62 link(s) inventions I, II and III. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claim 62. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Note: Claims 65 and 68-71 are not directed to the mentioned groups thus these claims will be examined with the linking claim 62 and the claims of the elected group of invention.

6. The inventions are distinct, each from the other because of the following reasons:

Inventions III and (I, II) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for

patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, since claims to both the combination and subcombination are presented and assumed to be patentable, the omission of details of the claimed subcombination in the combination is evidence that the patentability of the combination does not rely on the details of the specific subcombination. The subcombinations II and I have separate utility for use in a scanner without the details/structure of other subcombination.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

8. Since the applicant has made an election of the invention I in the election of 3/30/2004, thus claims 62-65, and 68-81 are examined in this Office action, and claims 66-67 and 82-90 have been withdrawn from further consideration as being directed to non-elected inventions.

9. Applicant's election with traverse of invention I in the reply filed on 3/30/04 is acknowledged. The traversal is on the ground(s) that all the claims can be searched and examined at the same time. This is not found persuasive because the different inventions are directed to different inventive efforts and also required different fields of search which are not in the same subclasses. Thus, the search for all claims will cause a burden on the examiner

The requirement is still deemed proper and is therefore made FINAL.

Oath/Declaration

10. Applicant has not given a post office address anywhere in the application papers as required by 37 CFR 1.33(a), which was in effect at the time of filing of the oath or declaration. A statement over applicant's signature providing a complete post office address is required.

Applicant should note that the objection to the Oath/Declaration as set forth above was made in the Office action mailed to applicant on 12/02/2002, page 2; however, applicant has not filed a new Oath/Declaration or other papers which provide the Post office or mailing address of the inventor.

Specification

11. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

12. The following corrections are suggested to the specification.

a) In page 1, line 8, --now U.S. Patent No. 6,201,639-- should be added after "Microscopy,", and on line 9, --now U.S. Patent No. 6,185,030-- should be added after "title,"; b) In page 23, on line 15, "Nn" should be changed to –In--, and on line 20, "$c" should be changed to –4B--; c) In page 31, on line 19, --now U.S. Patent No. 6,262,838—should be added after ""1998,", and on line 28, "60" should be deleted. The reason is that the drawings do not shown any element labeled as "60"; d) In page 32, on line 15, "43" should be changed to –93—since the numerical reference "43" is used for a

motion sensor as can be seen in figure 3 and the linear actuator is labeled as "93" as can be seen in page 32, line 1; e) In page 40, on line 13, "18b) should be deleted because the drawings do not show any component labeled as "18b". Appropriate correction is required.

Claim Objections

13. Claims 69, 71 and 72 are objected to because of the following informalities. Appropriate correction is required.

a) In claim 69, the feature thereof "said biological material" (line 2) does not have support in base claim 62. Should the term "said" in the mentioned feature be changed to –a– to make the claim comply with the requirement of 35 USC 112?

b) In claim 71, the feature thereof "said biological material" (line 2) does not have support in base claim 62. Should the term "said" in the mentioned feature be changed to --a-- to make the claim comply with the requirement of 35 USC 112?

c) In claim 72, on line 11, "a optical" should be changed to --an optical--.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 62-63 and 68-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (U.S. Patent No. 5,241,364).

Kimura discloses a confocal microscope for examining object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. The light from the object is guided to a detecting system (136-141) which collects data during the scanning motion and processes the collected data. Regarding to the feature that the numerical aperture of the objective lens is larger than 0.5 as recited in claim 68, such a feature is inherently from the system provided by Kimura because an objective used in a high speed scanning must have a large numerical aperture as admitted by the applicant in the present specification in page 4.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 62 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al (U.S. Patent No. 5,578,818, of record) in view of Nomura et al (U.S. Patent No. 4,948,330).

Kain et al discloses a scanning system for scanning a sample and for guiding fluorescent light from the sample to a detecting system. The scanning system as described in column 5 and shown in figure 7 comprises a scanning assembly (20) supporting optics having filters (18, 22), beamsplitters (24) and objective (32) wherein the light path defined between the output end of the fiber (44) to the surface of the object to be scanned in a plane perpendicular to the light path is has a constant length. The only feature missing from the scanning system provided by Kain et al is that they do not disclose that the object is able to move and tilt for the purpose of focusing. However, the use of a stage supporting a sample wherein the stage is driven by a mechanism which is able to drive the stage in a plane perpendicular to the direction of a light path and also able to tile the stage for focusing is known to one skilled in the art as can be seen in the stage for use with a microscope provided by Nomura et al. See columns 3-4 and figs 1 and 3. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system provided by Kain et al by using a mechanism as suggested by Nomura et al for driving the stage in a plane perpendicular to the light path fro the purpose of presenting different areas of a

large object to the scanning system and for tilting the stage for the purpose of focusing.

18. Claims 68-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al in view of Nomura et al as applied to claim 62 above, and further in view of Mathies et al (U.S. Patent No. 5,091,652, of record).

The combined product provided by Kain et al and Nomura et al as described above does not clearly state that the fluorescent object is a DNA chip comprised biological material or arranged for hybridization of a biological material. However, the use of a scanning system for observing a DNA sample contained biological material is known to one skilled in the art as can be seen in the scanning system provided by Mathies et al. See columns 4-6. It is also noted that the use of an objective lens having a numerical aperture larger than 0.5 is suggested by Mathies et al as can be seen in column 3, lines 53-57. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize/ modify the combined product provided by Kain et al and Nomura et al as suggested by Mathies et al by using the product for observing a DNA sample contained a biological material and an objective lens having a numerical aperture of 1.3 for providing a wide field of view.

Double Patenting

19. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20. Claims 62-65 and 68-81 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,201,639 in view of Kimura (U.S. Patent No. 5,241,364).

The device as claimed in claims 1-35 of the Patent '639 discloses a wide field of view scanner having a scanning mechanism supporting an objective lens and a mechanism for driving the scanning assembly. The features related to a driver, the detector in the form of a position element, light source, light detector, translation system for producing movement of the object and data processing system are disclosed as can be seen in claims 1-2, 6-7, 9-11, 15, 19, 21 and 23. The only feature missing from the device of the mentioned Patent claims is that they do not clearly state that the light path from the light source to the object has a constant length. However, the use of a scanning system having a scanning assembly supporting objective lens and the output end of a fiber of an illuminating system in a microscope wherein the path length from the output end of the fiber to the object has a constant length during a scanning process is known to one skilled in the art as can be seen in the microscope provided by Kimura. In particular, Kimura discloses a confocal microscope for examining

object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. The light from the object is guided to a detecting system (136-141) which collects data during the scanning motion and processes the collected data. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system recited in the claims 1-35 of the patent '639 by using a scanning assembly supporting the objective lens and the point source as suggested by Kimura for the purpose of maintaining the length of the light path constant.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thong Q Nguyen

Primary Examiner
Art Unit 2872

***